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ABSTRACT

This report contains information gathered in the second of a series from the National Center for Research in Mathematical Sciences Education regarding effects of mandated testing. The purpose of the study was to determine for each state: (1) whether mathematics testing was mandated at the state level; (2) the processes of test selection or development, administration, and reporting of results; (3) the role of teachers, state mathematics consultants, and state mathematics teacher organizations in the above processes; (4) names and characteristics of the tests used; (5) how test results are used by the states; and (6) how test results are reported to teachers. The main body of the document comprises page-long summaries of questionnaire responses for each state, including a table of test name by grade level. The prototypical testing model: (1) employed one test for all students at each of three or four grade levels; (2) used a multiple-choice format; (3) was developed by or in conjunction with a commercial publisher; (4) was a test of basic skills; (5) was used to inform the public and the legislature and compare students with national norms; and (6) provided teachers with information on individual students and on the school, district, or state on the objectives tested. There has been a general increase in state mandated testing (from 1984 to 1989) and state-mandated (versus district-mandated) testing has an influence on teachers. (RC)

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Mandated School Mathematics Testing in the United States: A Survey of State Mathematics Supervisors

by

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I

INTRODUCTION

This report contains information gathered in the second of a series of studies being carried out by the staff of the National Center for Research in Mathematical Sciences Education[1]. The series of studies, which seeks information about the effects of mandated testing, was initially proposed as a consequence of a national conference hosted by the Mathematical Sciences Education Board (MSEB) on the *Impact of Testing on Mathematical Sciences*, held at UCLA in June 1986. An agenda for the study of testing and its impact on school mathematics was developed by a MSEB subcommittee in the summer of 1986. The members were Tom Romberg, Jeremy Kilpatrick, and Tej Pandey. The agenda proposed a set of nine related studies, whose purpose was to:

(1) document information about current state tests and testing practices;

(2) assess the impact of state testing practices on various groups; and

(3) direct future developments so that testing practices will be less disruptive, more helpful, and more effective.

The first study of the series (Romberg, Zarinnia & Williams, 1988), hereinafter referred to as Survey I, sought information regarding the effects of mandated testing on teaching. It was found that large numbers of teachers reported being in situations in which mandated tests were given, and that such testing programs had effects on their instruction which were not consistent with current reform proposals, specifically the *Curriculum and Evaluation Standards for School Mathematics* (National Council of Teachers of Mathematics [NCTM], 1989). Such effects were mediated by the uses of test results by states and districts, as well as by the kinds of information which teachers obtained from the tests.

The purpose of this second study was to determine as nearly as possible the actual testing practices in each of the 50 states, including the kinds of tests given, the uses to which they are put, and the kinds of test information available to the teachers. Specifically, the objective was to determine, for each state,

(1) whether mathematics testing was mandated at the state level;

(2) the process used in selecting or developing the test(s), as well as methods of administration and reporting of results;

(3) the role of the State Mathematics Consultant, the State Mathematics Teachers Organization, and state mathematics teachers in the above process;

(4) names and characteristics of the tests used;

(5) how test results are used by the state; and

(6) how test results are reported to teachers.

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[1]For more information on the series of studies, see Romberg, Zarinnia, & Williams, 1988.

CONDUCT OF THE STUDY

Since the object of the current study was to obtain information regarding *mandated mathematics* testing, it seemed advisable to identify for each state the state mathematics supervisor or curriculum consultant as being most able to provide that information. Names were obtained from the current membership list of the National Council of Supervisors of Mathematics, and questionnaires were developed to solicit the desired information.

In the nationwide survey of eighth grade mathematics teachers, three kinds of testing programs were identified: first, there were *district mandated programs* in which every student in a grade level took essentially the same test. Second, there were *state mandated programs* in which every student in a grade level again took essentially the same test. Finally, there were *state assessment programs*, in which either a sample of students took part, or matrix sampling was used to provide a potentially different sample of questions to each student. This last program was distinguished as being different in intent from the first two, since individual student comparisons are obviously not possible. In some cases, it was found that states would mandate that individual districts choose and administer a test, but did not dictate beyond certain minimum guidelines how this was to be done.

Thus, three testing programs were of interest in the current study, which was designed to obtain and compare information regarding *state mandated programs* and/or *state assessment programs*, as well as any testing programs administered by the district but mandated by the state.

The three questionnaires developed for the first study (Survey I) which sought information about each of these three types of testing programs, were modified (to exclude, for example, questions regarding individual teacher behaviors) and used in the current study. Insofar as possible, questions remained intact to allow for comparisons between teachers' perceptions of testing practices and the situation as reported by state mathematics consultants.

In addition to the three questionnaire forms, a fourth form was developed for each state and partially individualized. In 1984, ERIC reported on the testing practices in each state (Suydam, 1984). A one-page questionnaire was developed which used the information from ERIC as a base, and asked for any appropriate revisions to this data. In addition, the mathematics consultants were sought to provide background information on the tests, on the methods for their administration, and on the reporting of results. Finally, the consultants were asked to comment on their role in the testing process, as well as the roles of state mathematics teachers and the state mathematics teachers organization. (Appendix A contains all four questionnaire forms.)

Questionnaires were initially mailed to all fifty mathematics consultants in mid-June, 1988. A combination of the hectic schedules of most state mathematics consultants, turnovers in the positions, and different organizational arrangements in each state, necessitated second mailings and follow-up telephone calls in February, 1989. In the end, information was obtained from all fifty states by July, 1989.

The results of the questionnaires are summarized in the next section. A discussion of these results and the conclusions based upon them are provided in the subsequent section. It should be noted that the focus in Survey I was eighth grade mathematics teachers. The questionnaires sent to the states reflected this orientation by asking for information on tests given in 7th, 8th, or 9th grades. In the current study, insofar as possible, information on testing at all appropriate grade levels has been provided. It should be apparent that not all information was provided in the same detail from all states. Some states sent extensive supplementary documents, while others returned only our survey forms. To the extent possible, information has been presented in a way that will facilitate comparisons between states as well as bring to light typical practices.

A chart accompanies the information for each state. The chart summarizes the testing programs in place in 1984 and 1989. Each test reported by the state is listed, together with information regarding the grade levels at which it is administered. A cell marked with an "O" indicates that the test was given at that grade level in 1984. The cells containing a "C" indicate that the test is currently given at those grade levels. The cells containing a "B" indicate that the test was given both in 1984 and currently.

Finally, it should be noted that although every effort was made to obtain correct information, the survey was often not completed by the person or persons to whom it was sent. Some ambiguities have been corrected through follow-up phone calls. In general, information is reported as it was indicated on the survey.

II

RESPONSES TO THE STATE QUESTIONNAIRE

ALABAMA
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Alabama used the Basic Competency Testing Program (BCT) at Grades 3, 6, 9 and 12; and the California Achievement Tests (CAT) at Grades 2, 4, 5, 8 and 10. This is no longer the situation. The State Board of Education mandated that all students in Grades 1, 2, 4, 5, 7, 8, and 10 take the Advanced Level Stanford Achievement Test (SAT). This test is viewed primarily as a test of the student's understanding of the mathematics curriculum. The State Board of Education also mandated that all 3rd, 6th, and 9th grade students take the BCT, which was developed by the state department of education and by teachers. This test is viewed primarily as a test of basic/essential skills. Finally, the Alabama High School Graduation Examination (HSGE) is required of all students in the fall of the 11th grade.

Many questions on these tests involve a narrowly defined topic. A substantial number involve mathematical symbols, brief verbal descriptions, or graphs/pictures. The context is described as a familiar everyday experience for most students. The tests seek a single correct answer in a multiple-choice format.

Scores for individual students, for each class, school, and district, and for students taking the test state-wide are available to teachers on objectives/topics tested and as an overall score.

The state uses the test data as a basis for: (a) student assignment to special programs, (b) a high school graduation requirement, (c) comparison of state students with national norms, and (d) assuring a minimum standard. In general, the state also uses the data to report to the public and the legislature.

There is no additional state assessment program, nor is there a requirement for districts to have their own assessment programs.

The consultant's role is to provide support and technical assistance. The state mathematics teachers organization is not involved in state testing. A representative group of teachers referred by the superintendents develops the competencies, item specifications, and test items.

STATE-WIDE TEST

	GRADE LEVEL TESTED												
TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
BCT				B			B			B			O
CAT			O		O	O			O		O		
HSGE												N	
SAT		C	C		C	C		C	C		C		

O = Past (1984)
C = Current
B = Both Past and Current

ALASKA
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Alaska had no mandated testing. This is no longer the situation. While the Alaska legislature did away with Alaska's state-wide assessment in 1986, it passed a new law mandating state assessment in 1989. Thus, 1989 is the first year for annual testing of reading, language arts, and math achievement, using the Iowa Test of Basic Skills (ITBS), at Grades 4, 6, and 8. The test is seen primarily as a test of basic or essential skills.

A substantial number of test questions seek a single correct answer in a multiple-choice format.

Scores for individual students are available to teachers on objectives or topics tested, and summary reports for each class are available to teachers with information on individual items and on objectives or topics tested. Teachers can request summary reports for their school, district, or for the entire state, but they would not normally receive them without requesting them.

The state uses the test data for (a) program evaluation, (b) comparison of different mathematics programs, and (c) comparison of state students with national norms. In general, the state uses the data to report to the public and the legislature, and to deliberately affect curriculum and teaching.

There is no additional state assessment program, nor is there a requirement for districts to have their own assessment programs.

The respondent's role was to recommend teachers to serve on a test selection committee. The state mathematics teachers organization also provided some teachers to serve on this test selection committee. The committee analyzed both the curriculum guide and a variety of tests to determine how closely the tests matched the objectives of the curriculum.

STATE-WIDE TEST

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
ITBS					C		C		C				

C = Current

ARIZONA
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC incorrectly reported that Arizona had no mandated tests. There were in fact state mandated tests. In 1989, the legislature mandated that the commercially developed Iowa Test of Basic Skills (ITBS) be given to all students in Grades 2 - 11. The ITBS is primarily a test of basic/essential skills.

The test questions involve several topics. A substantial number involve mathematical symbols, brief verbal descriptions, or graphs/pictures. The contexts for many questions are essentially abstract. The test seeks a single correct answer in a multiple-choice format.

Scores for individual students and summary reports for each class are available to teachers on individual items and objectives/topics tested. Summary reports for the school and district are available to teachers on objectives/topics tested and as an overall score. A summary report on students taking the test state-wide is available as an overall score only.

The state uses the test in the evaluation of state policies. In general, the state uses the data to report to the public and the legislature. The legislature chose mandated testing as a way of insuring teacher accountability -- the state education agency is developing ways to determine competency with other means.

There is no additional state assessment program, nor is there a requirement for districts to have their own assessment programs.

Neither the respondent nor the state mathematics teachers organization play a role in mathematics testing. The mathematics teachers administered the tests in their classes.

STATE-WIDE TEST

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
ITBS			C	C	C	C	C	C	C	C	C	C	

C = Current

ARKANSAS
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Arkansas administered the Arkansas Minimum Performance Testing Program (MPTP) at Grades 3, 6, and 8. This is still the case. The Arkansas Minimum Performance Test was mandated by the legislature, developed by the state department of education with the assistance of an outside contractor, and is viewed primarily as a test of basic/essential skills.

Many (topics on) test questions are narrowly defined or involve several topics. A substantial number of questions involve mathematical symbols, brief verbal descriptions, or graphs/pictures. The context for a few questions is a familiar everyday experience for most students. The test seeks a single correct answer in a multiple-choice format.

Scores for individual students, and summary reports for each class, for the school, and for students taking the test state-wide are available to teachers on individual items and objectives/topics tested. A summary report for the district is not available to teachers but can be generated.

The state uses the test in (a) the evaluation of state policies, (b) grade to grade promotion/retention, (c) student assignment to special programs, and (d) the certification of mathematics competency. It is also used to compare districts, schools within the district, and state students with national norms. In general, the state uses the data to report to the public and the legislature, to stress the importance of what is tested, and to deliberately affect curriculum and teaching.

There is no additional state assessment program, nor is there a requirement for districts to have their own assessment programs.

As a specialist in mathematics, the respondent maintains several roles related to the statewide testing program. He served as chair of the committee that identified the skills that would be tested. That committee was composed of classroom teachers, school administrators, and representatives from colleges and universities in the state. Secondly, he coordinated the writing of test and item specifications which was followed by actual item writing. Committees with a makeup similar to the skill selection committee were used to complete these tasks. The math specialist is available for editing and proof reading throughout the field testing of items and in the final printing of the tests. Representatives from the state mathematics teachers organization (Arkansas Council of Teachers of Mathematics) served on all committees mentioned above. Mathematics teachers served on committees at all levels of development.

STATE-WIDE TEST

	GRADE LEVEL TESTED												
TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
MPTP				B			B		B				

B = Both Past & Current

CALIFORNIA
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, it was reported in ERIC the California gave the Survey of Basic Skills at Grades 3, 6, and 12. California now gives the California Assessment Programs' Survey of Basic/Academic Skills (CAP) at Grades 3, 6, 8, and 12.

The legislature mandated that all students in Grades 3, 6, 8, and 12 participate in the California Assessment Program, which was developed by the State Department of Education in conjunction with a set of developmental committees. It is described as primarily a test of students' understanding of the mathematics curriculum.

All categories of content in the NCTM standards are represented except "communication." Some test questions involve broadly defined topics, some narrowly defined topics, and some several topics. Some involve brief, and some involve extensive, verbal descriptions, and others involve graphs/pictures. The context for most questions is familiar in terms of the mathematics classroom, but is not necessarily an everyday experience. The test seeks a single correct answer in a multiple-choice format, but some open-ended questions are given in Grade 12. Although the respondent is completely dissatisfied with multiple-choice testing, he "can't guarantee when his state will break through" it.

With the use of multiple-matrix sampling, scores for individual students and classes are not available. Summary reports for the school, the district and students taking the test state-wide are available to teachers on objectives/topics tested and as an overall score by sex, socio-economic status, and other criteria. State summaries are provided on illustrative test questions as well as on the objectives/topics tested. Statewide overall scores are widely reported but the summary report itself would rarely be seen by teachers.

The state uses the test for several purposes: to evaluate state policies, principals, superintendents, and school boards; sometimes to serve as a basis for the allocation of funds; to compare different mathematics programs, districts, and schools within a district; and to ascertain curricular strengths and weaknesses. In general, the state uses the data to report to the public and the legislature, to set a standard, to stress the importance of what is tested, to deliberately affect curriculum and teaching, and as a general guide to policy formulation.

In addition to CAP, the state requires districts to administer Competency Exams, chosen or developed by the individual districts. These must be given once in Grades 4 through 6, once in Grades 7 through 9, and once in Grades 10 through 12. Districts are required to remediate those students not passing the competency exams. Nearly all students do pass. To qualify for Chapter I funds, districts must give a nationally normed test.

The respondent coordinated development of all mathematics instruments and assisted others in the department in accomplishing needed tasks. The California Mathematics Council and the state mathematics teachers organization both had representatives on committees involved with the development of the assessment program. State mathematics teachers were heavily involved in test writing, test review and selection, and item selection.

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
STATE ASSESSMENT PROGRAM													
CAP				B			B		C				B
DISTRICT TEST													
CHOICE					ONCE			ONCE			ONCE		

C = Current
B = Both Past & Current

COLORADO
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Colorado had no mandated tests. This is no longer the situation. The State Board of Education (with legislative "blessing" through the Public School Finance Act of 1988) mandated that a sampling of 4th-, 7th-, and 10th-graders take the Iowa Test of Basic Skills (ITBS), beginning in the 1988-89 school year. It is described as primarily a test of basic/essential skills. All districts do not participate because of the sampling procedure.

Topics tested include: communication, reasoning, number, number systems, computation, measurement, estimation, geometry, and algebra. A substantial number of questions involve a narrowly defined topic. They are presented using mathematical symbols or brief verbal descriptions. The context is described as essentially abstract. The test seeks a single correct answer in a multiple-choice format.

A summary report for the school is available on individual items and on objectives/topics tested. A summary report for the district is not available. A summary report on students taking the test state-wide is available as an overall score only.

The state uses the test in the evaluation of state policies and to compare state students with national norms. In general terms, the state uses the data to inform the public by publishing results and as a general guide to policy formulation.

There is no additional state-wide math test, nor is there a requirement for districts to have their own assessment programs.

STATE-ASSESSMENT PROGRAM

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
ITBS					C			C			C		

C = Current

CONNECTICUT
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Connecticut used the Basic Skills Proficiency Test (BSPT) at Grade 9. This is no longer the situation. Connecticut now has mandated that the Connecticut Mastery Tests (CMT) be administered to every 4th-, 6th- and 8th-grader. The test was developed by the state department of education, and is described as primarily a test of the student's understanding of the mathematics curriculum.

A substantial number of questions involve a narrowly defined topic. They are presented using mathematical symbols, brief or extensive verbal descriptions, or graphs/pictures. The context for many questions is described as a familiar everyday experience of most students; for other questions, it is essentially abstract. The test seeks a single correct answer in a multiple-choice format.

State scores for individual students, for each class, school, district, and for students taking the test state-wide are available on objectives/topics tested and by domain and total test.

The state uses the test in the evaluation of state policies, in the allocation of funds, in student assignment to special programs, and in the comparison of districts and schools within the district. In general terms, the state uses the data to report to the public and the legislature, to set a standard, to stress the importance of what is tested, and to deliberately affect curriculum and teaching.

There is no additional state assessment program, nor is there a requirement for districts to have their own assessment programs.

The respondent oversees the entire test development process and works very closely with the testing office. The state mathematics teachers organization plays no role in state testing. The entire 19 member Mathematics Mastery Testing Advisory Committee that sets all policy is composed of present or former mathematics teachers.

STATE-WIDE TEST

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
BSPT										O			
CMT					C		C		C				

O = Past (1984)
C = Current

DELAWARE
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Delaware had the Comprehensive Tests of Basic Skills (CTBS) at Grades 1, 2, 3, 4, 5, 6, 7, 8, and 11. This is still the situation. Administration of the test was mandated by the legislature. It is described both as a test of basic/essential skills and as a test of the student's understanding of the mathematics curriculum. However, 1988 was the last year of a 10-year contract with McGraw-Hill; bids for a 2-year contract testing the same grades are now being accepted.

A substantial number of questions involve several topics. They are presented using mathematical symbols, brief verbal descriptions, or graphs/pictures. The context is described as a familiar everyday experience of most students. The test seeks a single correct answer in a multiple-choice format.

Scores for individual students, for each class, school, district, and for students taking the test state-wide are available on individual items and objectives/topics tested.

The state uses the test to compare state students with the national norms. The schools/districts may use test scores in grade to grade promotion/retention and in student assignment to special programs. In general, the state uses the data to report to the public and the legislature.

There is no additional state assessment program, nor is there a requirement for districts to have their own assessment programs.

The respondent is a State Mathematics Consultant (K -12). The state mathematics teachers organization is represented on the State Math Advisory Committee to review test results. Mathematics teachers administer the tests.

STATE-WIDE TEST

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
CTBS		B	B	B	B	B	B	B	B			B	

B = Both Past & Current

FLORIDA
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Florida gave the State Student Assessment Tests (SSAT) at Grades 3, 5, 8 and 10. This is still the situation. The State Department of Education developed the SSAT, which was mandated by the legislature. It is described as primarily a test of basic/essential skills.

Many of the test questions involve a narrowly defined topic. A substantial number involve mathematical symbols, brief or extensive verbal descriptions, or graphs/pictures. The context is a familiar everyday experience for most students. The test seeks a single correct answer in a multiple-choice format.

Scores for individual students and summary reports for the school and district are available to teachers on individual items and objectives/topics tested. Summary reports for each class and for students taking the test state-wide are available on objectives/topics tested.

The state uses the test to identify basic skills and weaknesses for remediation, to allocate funds for compensatory education, and to compare districts. In general, the state uses the data to report to the public and the legislature.

There is no additional state assessment program, nor is there a requirement for districts to have their own assessment programs.

STATE-WIDE TEST

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
SSAT				B		B			B		B		

B = Both Past & Current

GEORGIA
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Georgia had no mandated tests. This is no longer the situation. Currently, Georgia uses the Georgia Statewide Student Assessment Program (GSSAP). This program employs two separate tests.

The legislature mandated in the Quality Basic Education Act that all 7th- and 9th-graders take the Iowa Tests of Basic Skills (ITBS), Test(s) of Achievement and Proficiency. This is primarily a test of the student's understanding of the mathematics curriculum. The same Quality Basic Education Act mandated that all 8th-graders take the Georgia Criterion-Referenced Test (GCRT), developed by the state's department of education. It is a test of both basic/essential skills and the student's understanding of the mathematics curriculum.

Scores for individual students and summary reports for each class, the school, and the district are available to teachers on individual items and on objectives/topics tested. Summary reports on the students taking the tests state-wide are available to teachers on objectives/topics tested.

The state uses test results for (a) the evaluation of state policies, (b) the allocation of funds, (c) student assignment to special programs, and (d) the comparison of districts, schools within the district and state students with national norms. (A testing model under development incorporates some other components--teachers recertification, career ladder, and salary; and evaluation of principals, superintendent, and school boards.) In general, the state uses the data to report to the public and the legislature and to deliberately affect curriculum and teaching.

The legislature also mandated that 7th-grade students participate in the National Assessment of Educational Progress (NAEP), developed by Educational Testing Services. Results from NAEP were used as a state assessment program. This is seen primarily as a test of basic/essential skills. Not all districts participate.

Summary reports for the school and district are not readily available, but a summary report on the achievement of students taking the test state-wide is available to teachers on objectives/topics tested.

The state uses the information from NAEP in the evaluation of state policies, in the allocation of funds, and to compare state students with national norms. Generally, the state uses NAEP to inform the public by publishing the results.

There is no requirement for districts to have their own assessment programs.

The respondent is a consultant. The state mathematics teachers organization provides services as consultants for test development.

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
STATE-WIDE MATH TEST													
ITBS								C		C			
GCRT									C				
STATE ASSESSMENT PROGRAM													
NAEP								C					

C = Current

HAWAII
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Hawaii used the Stanford Achievement Test (SAT) at Grades 2, 4, and 6. This is no longer the situation. It now administers the SAT at Grades 3, 6, 8, and 10. The testing was mandated by the State Department of Education. The test is described as primarily a test of basic/essential skills.

A substantial number of questions involve several topics. They are presented using mathematical symbols, brief or extensive verbal descriptions, or graphs/pictures. The context for some questions is described as both a familiar everyday experience for most students and for other questions as essentially abstract. The test seeks a single correct answer in a multiple-choice format.

State scores for individual students, for each class, school, district, and for students taking the test state-wide are available on individual items, on objectives/topics tested, and as an overall score.

The state uses the test on the evaluation of state policies, in student assignment to special programs, and in the comparison of different mathematics programs. In general, the state uses the data to report to the public and the legislature and as a general guide to policy formulation.

There is no additional state assessment program, nor is there a requirement for districts to have their own assessment programs.

The respondent reviews all tests for curriculum validity and analyses state-wide results. The state mathematics teachers organization and mathematics teachers play no role in state testing.

STATE-WIDE TEST

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
SAT			O	C	O		B		C		C		

O = Past (1984)
C = Current
B = Both Past & Current

IDAHO
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Idaho administered a Proficiency Test (PT) at Grades 8 and 9. This is no longer the situation. Idaho now gives the Iowa Test of Basic Skills (ITBS) at Grade 6, and the Test of Academic Progress (TAP) at Grades 8 and 11. The State Department of Education mandated the testing. Both tests are described as primarily tests of basic/essential skills.

Topics tested include: problem solving, number systems, computation, measurement, estimation, geometry, algebra, probability, and statistics. A substantial number of questions involve several topics. They are presented using brief verbal descriptions. The context is described as a familiar everyday experience for most students. The tests seeks a single correct answer in a multiple-choice format.

State scores for individual students, the school, the district, and students taking the test state-wide are available on individual items. Summary reports for each class are available as an overall score only.

The state uses the test as a high school graduation requirement for grade 11 (it is an option used to meet a "C" average graduation requirement), and to compare different mathematics programs and state students with national norms. In general, the state uses the data to report to the public and the legislature.

There is no additional state assessment program, nor is there a requirement for districts to have their own assessment programs.

The respondent monitors testing, serves to remediate, and offers teacher training on state testing. (He notes: "It is not Idaho's desire to teach the tests but to teach so that learning takes place in such a way that children expand their conceptual understanding.")

STATE-WIDE TEST

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
PT									O	O			
ITBS							C						
TAP									C			C	

O = Past (1984)
C = Current

ILLINOIS
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Illinois gave the Inventory of Educational Progress (IEP) at Grades 4, 8, and 11. This is no longer the situation. The legislature mandated that all students in Grades 3, 6, 8, and 11 take the Illinois Goals Assessment Program (IGAP) test which was developed by a committee of teachers and the State Department of Education. It is seen primarily as a test of the student's understanding of the mathematics curriculum.

The test topics include: problem solving, communication, reasoning, number, number systems, computation, measurement, estimation, geometry, algebra, probability, statistics, and functions.

A substantial number of test questions involve either a broadly defined topic or several topics. A substantial number involve mathematical symbols, brief or extensive verbal descriptions, or graphs/pictures. The contexts are described as familiar everyday experiences for most students. The test seeks a single correct answer in a multiple-choice format.

State scores for individual students and each class are not available to teachers. Summary reports for the school, the district, and students taking the test state-wide are available on State Goals and as an overall score.

The state uses the test in the evaluation of state policies. In general, the state uses the data to report to the public and the legislature and as a general guide to policy formulation.

There is no additional state assessment program, nor is there a requirement for districts to have their own assessment programs.

The consultant a) works with the assessment section to select and train item writers, b) formats the assessment instruments in mathematics, c) determines the final assessment instruments used, and d) interprets the results of the assessment to determine future plans. The Illinois Council of Teachers of Mathematics (ICTM) makes suggestions to the consultant's office about the concerns that they have with the assessment procedures and instruments. Their members are asked to write items and to assist the consultant's office in the interpretation of the results of the assessment. The ICTM governing board is kept abreast of the assessment procedures and the development of the assessment instruments in mathematics. At their regular board meetings, the ICTM is involved in every phase of assessment. They are involved in writing items, piloting items in their classrooms, selecting the best items from the pool of acceptable items, and suggesting formats for the final version of the instruments. Teachers will also help in the interpretation of the data.

STATE-WIDE TEST

	GRADE LEVEL TESTED												
TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
IEP					O				O			O	
IGAP				C			C		C			C	

O = Past (1984)
C = Current

INDIANA
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Indiana gave district-administered standardized tests by levels: primary, intermediate, junior/middle, and high school. This is no longer the situation. The legislature mandated the use of the Indiana Statewide Testing and Evaluation Procedure (ISTEP). ISTEP is basically the California Achievement Test plus supplemental questions that address Indiana's proficiencies. It is described as primarily a test of basic/essential skills. Students are tested in Grades 1, 2, 3, 6, 8, 9, and 11. In Grades 1, 2, 3, 6, and 8 students who fall below the 16th percentile nationally and in state score levels are mandated to attend summer school remediation.

A substantial number of questions involve a broadly defined topic. They are presented as mathematical symbols. The context is described as essentially abstract. The test seeks a single correct answer in a multiple-choice format.

Summary reports for individual students, for each class, school, district, and for students taking the test state-wide are available on objectives/topics tested.

The state uses the test in the evaluation of state policies, for the allocation of funds (performance based awards), for grade to grade promotion/retention, for student assignment to special programs, and to compare districts, schools within the district, and state students with national norms. In general, the state uses the data to report to the public and the legislature.

There is no additional state assessment program, nor is there a requirement for districts to have their own assessment programs.

The respondent deals with the mathematics curriculum and submits suggestions and comments to the assessment division of his department or agency. The state mathematics teachers organization and mathematics teachers play no role in state testing.

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
STATE-WIDE TEST													
ISTEP		C	C	C			C		C	C		C	

DISTRICT TEST*

PRIMARY	INTERMEDIATE	MIDDLE SCHOOL	HIGH SCHOOL

* No longer in place.

C = Current

IOWA
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Iowa gave an Assessment test at Grades 5 and 8. This is no longer the case. Now, Iowa requires local educational authorities to have an assessment process but does not mandate testing. The respondent recommends appropriate testing materials and procedures to local authorities. Virtually all schools utilize the Iowa Tests of Basic Skills.

State mathematics teachers organizations play no role in state testing.

Mathematics teachers assist in the selection of appropriate instruments and procedures.

KANSAS
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Kansas gave the Minimum Competency Test (MCT) at Grades 2, 4, 6, 8, and 11. This is no longer the situation. Kansas now gives this test at Grades 2, 4, 6, 8, and 10 under mandate by the legislature. The test was developed through a contract with the University of Kansas. It is described as primarily a test of basic/essential skills.

A substantial number of questions are presented as brief verbal descriptions or use graphs/pictures. The context is described as a familiar everyday experience of most students. The test seeks a single correct answer in a multiple-choice format.

State scores for individual students, for each class, school, district, and for students taking the test state-wide are available on individual items and objectives/topics tested.

In general, the state uses the data to report to the public and the legislature, to stress the importance of what is tested, to deliberately affect curriculum and teaching, as a general guide to policy formulation, and to identify students needing remediation.

There is no additional state assessment program, nor is there a requirement for districts to have their own assessment programs.

The respondent is the testing director. The state mathematics teachers organization plays no formal role in state testing. The state mathematics teachers have developed test objectives and items, participated in validity and standard-setting studies, and serve on the advisory council.

STATE-WIDE TEST

	GRADE LEVEL TESTED												
TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
MCT			B		B		B		B		C	O	

O = Past (1984)
C = Current
B = Both Past & Current

KENTUCKY
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Kentucky had no mandated tests. This is no longer the situation. The Kentucky legislature mandated the Kentucky Essential Skills Test (KEST) for the spring of 1985 through the spring of 1988. KEST is a criterion-referenced test with some nationally norming questions based on state-developed Kentucky Essential Skills. The legislature also mandated a nationally-normed test (such as the CTBS or SAT--unknown at time of survey) for Grades K, 1, 2, 3, 5, 7, 10, only in math and language arts, starting in the spring of 1989.

Topics on the test are to include: number, number systems, computation, measurement, geometry, and, to a limited degree, problem solving, estimation, algebra and probability. While the test has not been selected, it is expected that a substantial number of questions will involve a narrowly defined topic, and will use mathematical symbols, brief verbal descriptions, or graphs/pictures. A substantial number will be strictly computation. The context will be a familiar everyday experience for most students. The test will seek a single correct answer in a multiple-choice format.

It is not known how the new test scores will be reported; however, KEST scores for individual students, for each class, school, and district are available on objectives/topics tested. Scores for individual students are available on individual items. Scores for the district and for students taking the test state-wide are available as an overall score only. Summary reports for the school, district, and achievement of students taking the test state-wide are available to districts but it is up to them to provide details in various formats to teachers.

Currently, the state uses the KEST test as an evaluation of state policies, as a comparison of school district-status, in allocation of funds (remediation units), in grade-to-grade promotion/retention in some districts/counties, in student assignment to special programs, as a high school graduation requirement in some districts/counties, and as certification of mathematics competency in some districts/counties; also it is used to compare different mathematics programs, districts, schools within the district, and state students with national norms. Finally, the state indirectly uses results in evaluation of principals, superintendents, and school boards. The governor is considering using results for determining teachers career ladders and salary. In general, the state uses the data to report to the public and the legislature, to set a standard, to stress the importance of what is tested, to deliberately affect curriculum and teaching, and as a general guide to policy formulation.

There is no additional state assessment program, nor is there a requirement for districts to have their own assessment programs.

The respondent served on the technical committee to choose the test. (Respondent notes that they will "push for a math test to support the NCTM *Standards* in the future."). No input was asked of the mathematics community regarding the choosing of a new test for 1989. The Board of Directors of the Kentucky Council of Teachers of Mathematics has written a letter to support incorporation of the new NCTM *Standards* into the test, but that did not happen.

STATE-WIDE TEST

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
KEST*													
NORMED TEST	C	C	C	C		C		C			C		

C = Current

* Not mandated for use until after 1988.

LOUISIANA
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Louisiana gave the Louisiana State Test (LST) at Grades 7 and 11. This is no longer the situation. Now, the LST in mathematics is mandated at Grades 3, 5, 7, and 11. In addition, norm-referenced tests are mandated at Grades 4, 6, and 10. Districts are free to choose their own norm referenced tests in Grades 4, 6 and 10. However, if they choose the state-adopted test (currently the CAT), administration costs are funded by the state; otherwise, districts pay for it themselves.

The Louisiana State Test (LST) was developed by the State Department of Education in conjunction with a committee of teachers and an outside contractor. This test is viewed as primarily a test of basic/essential skills.

Topics on the test include: problem solving, reasoning, number, number systems, computation, measurement, estimation, geometry, algebra, probability, statistics, and functions.

Many test questions involve a narrowly defined topic; others involve a broadly defined topic or several topics. A substantial number involve mathematical symbols, brief or extensive verbal descriptions, and graphs/pictures. The contexts are described as familiar everyday experiences for most students. The test seeks a single correct answer in a multiple-choice format.

Scores for individual students, for each class, school, district and for students taking the test state-wide are available to teachers on individual items and objectives/topics tested.

The state uses the test for the allocation of funds, the certification of mathematics competency, and comparison of districts. In general, the state uses the data to report to the public and the legislature and to set a standard.

There is no additional state assessment program.

The respondent leads in-service workshops and helped develop both test items and the instructional strategies guide. The state mathematics teachers organization plays no role in mathematics testing. The mathematics teachers teach performance objectives on which students will be tested, but play no formal role in testing.

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
STATE-WIDE TEST													
LST				C		C		B				B	
DISTRICT TEST													
NORMED TEST					C		C				C		

C = Current
B = Both Past & Current

MAINE
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that in Maine no mandated tests were given. This is no longer the situation. All 4th-, 8th-, and 11th-grade students are tested every year as mandated by the 1984 Legislative Reform Act. The Maine Educational Assessment (MEA) was developed by a committee of teachers. It is described as primarily a test of the student's understanding of the mathematics curriculum.

A substantial number of test questions involve broadly defined topics. A substantial number involve mathematical symbols, brief or extensive verbal descriptions, and graphs/pictures. The context is described as a familiar everyday experience of most students. The test seeks a single correct answer or multiple acceptable answers (open-ended) in a multiple-choice format (80%) and in an open-ended format (20%).

Scores for individual students and summary reports for each class, the school, the district and for students taking the test state-wide are available to teachers on individual items and objectives/topics tested.

The state uses the test in program evaluation of state policies and to compare districts. In general terms, the state uses the data to report to the public and to the legislature, to stress the importance of what is tested, to deliberately affect curriculum and teaching and as a general guide to policy formulation.

There is no additional state assessment program, nor is there a requirement for districts to have their own assessment programs.

The respondent is a Testing Committee member, works with item selection, and leads workshops and discussions on the Maine Educational Assessment. The state mathematics teachers organization has representation on the committee. All tests are developed by and interpreted by an advisory committee of state mathematics teachers from all levels.

STATE-WIDE TEST

	GRADE LEVEL TESTED												
TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
MEA					C				C			C	

C = Current

MARYLAND
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Maryland had no mandated tests. This is no longer the situation. The State Department of Education mandated that all 7th- and 9th-graders take the Maryland Functional Mathematics Test (MFMT) in accordance with a by-law of the Maryland State Department of Education passed by the State Board of Education. The 7th-grade test provides diagnostic information for remedial activities and the 9th-grade test is given in October and repeated in April for previous failures. The test is given (repeatedly) twice a year in Grades 10, 11, and 12 for 9th-grade non-passers. Passing the 9th-grade test is a requirement for a high school diploma; otherwise, a certificate of attendance is presented.

The tests were developed by the state department of education with input from teachers, supervisors, school administrators, and business and industry personnel. They are described as tests of basic/essential skills and of the students' understanding of the mathematics curriculum; concepts are also tested.

A substantial number of questions involve several topics. They are presented using mathematical symbols, brief verbal descriptions, graphs/pictures, or tables of data. The context is described as a familiar everyday experience for most students. The test seeks a single correct answer in a multiple-choice format.

State scores for individual students, each class, the school, the district, and for students taking the test state-wide are available on objectives/topics tested and as an overall score.

The state uses the tests in evaluation of state policies, in student assignment to special programs, as a high school graduation requirement, and as a certification of mathematics competency. In general, the state uses the data to report to the public and the legislature and to deliberately affect curriculum and teaching.

There is no additional state assessment program, nor is there a requirement for districts to have their own assessment programs.

The respondent conducts awareness training and teacher in-service programs. The state mathematics teachers organization plays no role in state testing. Mathematics teachers receive in-servicing with periodic updates available on request. Teachers are asked to voluntarily cover the objectives of the test in their normal routine teaching schedules.

STATE-WIDE TEST

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
MFMT								C		C	*	*	*

* FOR 9TH GRADE NON-PASSERS

C = Current

MASSACHUSETTS
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Massachusetts gave the Test of Basic Skills (TBS) but did not indicate grade levels. This is no longer the situation. The legislature mandated that all 3rd-, 6th-, and 9th-graders take the Basic Skills Math Test (BSMT) developed by the state department of education. It is described as a test of basic/essential skills.

A substantial number of questions involve a broadly defined topic or several topics. They are presented using mathematical symbols, brief verbal descriptions, and graphs/pictures. The context for some questions is described as a familiar everyday experience for most students, while for other questions the context is more likely to be familiar to adults. The test seeks a single correct answer in a multiple-choice format.

State scores for individual students and the school are available on individual items and as an overall score. Summary reports for each class are not available to teachers. Summary reports for the district and students taking the test state-wide are available to teachers as an overall score.

The state uses the test in the allocation of funds, in the certification of mathematics competency, and in the comparison of districts and schools within the district. In general, the state uses the data to report to the public and the legislature and to set a standard.

There is no additional state assessment program, nor is there a requirement for districts to have their own assessment programs.

The respondent helps with test development and administration. The state mathematics teachers organization assists in the development of the test.

STATE-WIDE TEST

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
TBS (O)													
MST				C			C			C			

C = Current

MICHIGAN
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC incorrectly reported that Michigan had no mandated tests. This is not the situation. Since 1969, Michigan has used the Michigan Educational Assessment Program (MEAP) at Grades 4, 7 and 10. The testing program was mandated by the legislature and developed by the state department of education. It is described as primarily a test of basic/essential skills.

A substantial number of questions involve several topics. They are presented using mathematical symbols or brief verbal descriptions. The context is described as essentially abstract. The test seeks a single correct answer in a multiple-choice format.

State scores for individual students, each class, the school, the district, and for students taking the test state-wide are available on individual items and on objectives/topics tested.

The state uses the test in the allocation of funds. In general, the state uses the data to report to the public and the legislature and to stress the importance of what is tested.

There is no additional state assessment program, nor is there a requirement for districts to have their own assessment programs.

The respondent is a content-consultant to the assessment department. The state mathematics teachers organization was involved in the development of the test and produced support and interpretive documents.

STATE-WIDE TEST

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
MEAP					B			B			B		

B = Both Past & Current

MINNESOTA
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Minnesota used the Educational Assessment Tests (EAT) at Grades 4, 8 and 11. This is no longer the situation. In 1985, the legislature directed the Minnesota Department of Education to develop Learning Outcomes in several subject areas, beginning with mathematics. The Curriculum Services section developed (through a task force, since there was not a mathematics specialist at the time) a set of learner outcomes for mathematics education. This document was printed in September, 1988. The Assessment section worked on developing tests with items correlated to the learner outcomes. These tests were normed in March of 1989, using a sample of 8,000 students who took the test without calculators, and an additional 4,000 who took the test using calculators. The respondent writes, "There has been a great deal of controversy within the mathematics education community about the level and appropriateness of these tests, especially with the advent of the NCTM *Standards*."

The Essential Learner Outcome (ELO) testing program will be administered to all students in Grades 6, 9, and 11. The tests were developed by the state department of education in conjunction with committees of teachers, and are described primarily as tests of the students' understanding of the mathematics curriculum.

A substantial number of test questions involve a narrowly defined topic, presented to students using brief verbal descriptions or graphs/pictures. The context for a substantial number of questions is described as a familiar everyday experience for most students. The test seeks a single correct answer in a multiple choice format.

Topics include reasoning, number, number systems, computation, measurement, estimation, geometry, algebra, probability, statistics, and functions, as well as "a little" problem solving.

Summary reports for the district and for students taking the test state-wide will be available to teachers with information on individual items, and on objectives or topics tested.

The state will use the results of the test to compare (a) regions within the state, (b) district with district, and (c) state students with national norms. In general, such results are used to inform the public, to set a standard, and to stress the importance of what is being tested. Districts have the option of using the test for all students. They can get norming information for their comparison with similar sized districts.

There is no additional state assessment program, nor is there a requirement for districts to have their own assessment programs.

The respondent's role is to work with the assessment section. The state mathematics teachers organization has adopted the role of a watchdog and advisor during the process, and some mathematics teachers in the state have been asked to contribute test items, review tests, or help set standards.

STATE-WIDE TEST

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
EAT					O				O			O	
ELO							C			C		C	

O = Past (1984)
C = Current

MISSISSIPPI
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Mississippi gave the California Achievement Test (CAT) at Grades 4, 6, and 8. This is no longer the situation. Mississippi now gives the Stanford Achievement Test (SAT) at Grades 1, 2RG, 4, and 6 (Grade 8 in 1989). 2RG refers to the testing of a selected group of grade 2 pupils in 108 districts. These pupils are a part of a research study which is being jointly conducted by the Mississippi Department of Education and Mississippi State University. The legislature also mandated that all students in grades 3, 5, 8, and 11 take the Basic Skills Assessment Program (BSAP) test, developed by the state department of education, described as a test of basic/essential skills.

The state uses test results as part of the state performance based accreditation. In general, the state uses the data to deliberately affect curriculum and teaching.

Scores for individual students, the school, the district and for students taking the test state-wide are available to teachers on objectives/topics tested. Summary reports for each class are not available to teachers.

Test questions are presented using mathematical symbols, brief or extensive verbal descriptions, and graphs/pictures. The context is described as a familiar everyday experience for most students. The test seeks a single correct answer in a multiple-choice format.

There is no additional state assessment program, nor is there a requirement for districts to have their own assessment programs.

The respondent assisted with test item development, coordinated a math teachers' committee for test item review, and audits the Basic Skills Assessment Program. The state mathematics teachers organization plays an advisory role. The mathematics teachers help to review and revise test items for BSAP.

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
STATE-WIDE TEST													
CAT					O		O		O				
BSAP				C		C			C			*C	
DISTRICT TEST													
SAT		C	C		C		C		C				

* FUNCTIONAL LITERACY EXAMINATION

O = Past (1984)
C = Current

MISSOURI
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Missouri had no mandated tests. This is no longer the situation. Now, local districts must test 2 nonconsecutive grades from Grades 2 through 6, and 2 nonconsecutive grades from Grades 7 through 10 using an approved criterion-referenced test which measures mastery of the Missouri key skills. Nine such tests comprise the Missouri Mastery and Achievement Tests (MMAT).

The Missouri Mastery and Achievement tests were developed by the state department of education, a committee of teachers, and the Center for Educational Assessment at the University of Missouri. They are designed primarily to test the student's understanding of the mathematics curriculum, and were intended to provide districts a test which was aligned with the Missouri Key skills.

The following topics are represented on the test: problem solving, reasoning, number, number systems, computation, measurement, estimation, geometry, algebra, probability, and statistics. Many questions on the test are narrowly defined. A substantial number involve mathematical symbols, brief verbal descriptions, and graphs/pictures. The context is described as a familiar everyday experience for most students. The tests seek a single correct answer in a multiple-choice format.

A summary report for the school, the district, and for students taking the test state-wide is available to teachers on objectives/topics tested and as an overall score.

The state uses results of the MMAT for evaluation of state policies, to compare state students with national norms, and as one means of identifying academically improving schools. In general, state mathematics tests are used to inform the public by publishing the results and to stress the importance of what is tested.

Prior to the development of the MMAT program, the State Board of Education mandated that students take the BEST test. This is primarily a test of basic/essential skills developed by the state department of education. It is currently being phased out.

Many questions on the test involve a narrowly defined topic. A substantial number of questions involve mathematical symbols, brief verbal descriptions, and graphs/pictures. The context is described as a familiar everyday experience for most students. The tests seek a single correct answer in a multiple-choice format.

Scores for individual students are available on individual items and on objectives/topics tested. Summary reports for each class, the school, the district and for students taking the test state-wide are available to teachers on objectives/topics tested.

The state uses the test in evaluation of state policies. In general, the state uses the data to report to the public and the legislature, to set a standard, to stress the importance of what is tested, and to deliberately affect curriculum and teaching.

There is no additional state assessment program.

The respondent is a curriculum consultant. The state mathematics teachers organization and state mathematics teachers assisted in the development of the Missouri Mastery and Achievement Test.

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
STATE-WIDE TEST													
BEST	?	?	?	?	?	?	?	?	?	?	?	?	?
DISTRICT TEST													
MMAT			TWICE 2-6					TWICE 7-10					

MONTANA
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Montana used the School Testing Service - Consumer Mathematics Test (STS-CM) at Grades 6 and 11. This is no longer the situation. Currently, there are no mandated testing procedures being followed in Montana.

STATE-WIDE TEST

	GRADE LEVEL TESTED												
TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
STS-CM							O					O	

O = Past (1984)

NEBRASKA
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Nebraska gave no mandated tests. This is still the situation. However, very recently plans have been made to institute testing at the district level, at least once in Grades 4-6, once in Grades 7-9, and once in Grades 10-12.

NEVADA
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Nevada gave the Stanford Achievement Test (SAT) at Grades 3 and 6 and the High School Proficiency Examination (HSPE) at Grades 9 and 11. The legislature mandated that all students in Grade 9 take the Science Research Associates (SRA) Survey of Basic Skills level 37. It is described as primarily a test of basic/essential skills. There have been no changes at Grades 3, 6, and 11.

Many test questions involve a narrowly defined topic; others involve a broadly defined topic or several topics. They are presented using mathematical symbols, brief or extensive verbal descriptions and graphs/pictures. The context for some questions is described as a familiar everyday experience for most students, while others are more likely to be familiar to adults. The test seeks a single correct answer in a multiple-choice format.

Summary reports for individual students, each class, the school, the district, and for students taking the test state-wide are available on objectives/topics tested and as an overall score. A summary report for students taking the test state-wide is also available on individual items.

The state uses the test as a basis for (a) student assignment to special programs, (b) high school graduation, and (c) comparison of state students with national norms. In general, the state uses the data to report to the public and the legislature, to set a standard, to stress the importance of what is tested, and to deliberately affect curriculum and teaching.

There is no additional state assessment program, nor is there a requirement for districts to have their own assessment programs.

The respondent provides input to test specifications and test items and monitors test sessions. The state mathematics teachers organization plays no part in state testing. Teacher input includes testing specifications and testing items.

STATE-WIDE TEST

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
SAT				B			B						
HSPE										O		B	
SRA SBS										C			

O = Past (1984)
C = Current
B = Both Past & Current

NEW HAMPSHIRE
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that New Hampshire used Educational Assessment (EA) at Grades 5, 9 and 12. This is no longer the situation. The state department of education mandated that all 4th-, 8th-, and 10th-graders take the mathematics sub-tests of the California Achievement Test, Form E and TCS tests. These are viewed primarily as a test of basic/essential skills.

A substantial number of questions are presented using mathematical symbols, graphs/pictures, brief verbal descriptions, or simple word problems. The test seeks a single correct answer in a multiple-choice format.

Summary reports for individual students are available on individual items as an item analysis. Summary reports for each class are available on individual items as a class "item analysis" summary. Summary reports for the school are available on individual items and school item analysis data by grade. Summary reports for the district and students taking the test state-wide are available as an overall score only.

The state uses the test in school evaluation or district evaluation, and to compare districts, schools within the district and state students with national norms. In general, the state uses the data to report to the public and the legislature and to formulate policy.

There is no additional state assessment program. However, the State Board of Education, mandated that all 5th-, 9th-, and 11th-graders take district mathematics tests (usually called the "Accountability Tests"). Some districts use a commercially developed test, while some districts have committees that develop the test. These are primarily tests of basic/essential skills. The state uses the district test to see how well students master specified, local material. In general, the state uses district tests to deliberately impact on curriculum and teaching at the local level.

The respondent was on the advisory panel when the current testing battery was selected. The state mathematics teachers organization and state math teachers in general play no role in math testing.

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
STATE-WIDE TEST													
EA						O				O			O
CAT-E/TCS					C				C		C		
DISTRICT TEST													
CHOICE						C				C		C	

O = Past (1984)
C = Current

NEW JERSEY
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that New Jersey had the Minimum Basic Skills (MBS) Test at Grades 9 and 10. After 1978, the MBS was administered to all 9th-grade students who were required to take it as a graduation requirement. Those students who failed were provided additional opportunities to retake the test in grades 10, 11, and 12. Once a student passed the MBS, this graduation requirement was met and the MBS was no longer administered to that student. This is no longer the case.

In the spring of 1984, the current mandated testing program was first administered. The legislature required that all 9th-grade students take the High School Proficiency Test (HSPT), which was developed by a commercial publisher, the state department of education, and a mathematics committee[2]. The High School Proficiency Test is viewed primarily as a test of basic/essential skills.

The following topics are represented on the state test: problem solving, number, number systems, computation, measurement, estimation, geometry, algebra, probability, and statistics.

Many questions on the test involve narrowly defined topics; others involve several topics. A substantial number of questions involve mathematical symbols, brief verbal descriptions, or use graphs/pictures. The context for some problems is described as a familiar everyday experience for most students and for others as essentially abstract. The tests seek a single correct answer in a multiple-choice format.

Summary reports for individual students, each class, the school, the district, and for students taking the test state-wide are available on individual items, on objectives/topics tested, and as an overall score.

The state uses the test in the allocation of funds, in the declaration of "bankrupt" districts, in student assignment to special programs, as a high school graduation requirement, and in the comparison of districts and schools within a district. In general, the state uses the data to report to the public and the legislature, to set a standard, to stress the importance of what is tested, to deliberately affect curriculum and teaching, and as a general guide to policy formulation.

There is no additional state assessment program. However, districts are mandated by the state to test all students in Grades 3 through 8, and to continue testing students through the 12th grade for students who have not demonstrated mastery of basic skills. Districts choose from an approved list of tests.

The respondent serves in the New Jersey mathematics testing program as a mathematics curriculum specialist assigned to the Bureau of Cognitive and Academic Skills. He is involved in development, review, analysis and interpretation of tests, and in curriculum development directly related to testing of the statewide assessment program.

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[2]The mathematics committee included members representing a wide range of constituencies (i.e., district mathematics supervisors and department chairs, school administrators, teachers, college mathematics educators, members of business and industry, PTA members, and parents).

Members of the state mathematics organization are also members of the HSPT Mathematics Committee. These members play an integral role in content and review activities. Mathematics teachers dominate membership of the HSPT Mathematics Review Committee. A more detailed description can be found in New Jersey High School Proficiency Test: Identification of the Skills and Development of the Items.

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
STATE-WIDE TEST													
MBS										O	O*	O*	O*
HSPT										C			
DISTRICT TEST													
SELECTED				C	C	C	C	C	C	C$	C$	C$	C$

* For students not passing in ninth grade
$ For basic skills students

O = Past (1984)
C = Current

NEW MEXICO
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that New Mexico had the Comprehensive Test of Basic Skills (CTBS) at Grades 3, 5 and 8. This is no longer the situation. Currently, the State Board of Education mandates that all students in Grades 1-8 take the New Mexico Achievement Test (NMAT), developed by a commercial publisher and the state department of education. It is described as primarily a test of basic/essential skills, and is based on state competencies.

A substantial number of questions involve a narrowly defined topic. They are presented using mathematical symbols, brief verbal descriptions, and graphs/pictures. The context is described as a familiar everyday experience for most students. The test seeks a single correct answer, or best answer, in a multiple-choice format.

State scores for individual students, each class, the school, the district, and for students taking the test state-wide are available on objectives/topics tested.

The state uses the test in the evaluation of state policies and programs, in grade to grade promotion/retention (as one of many indicators), in the accreditation data package, to compare state students with national norms, and in the comparison of districts and schools within the district. (They examine data, but don't rank order). In general, the state uses the data to report to the public and the legislature, to set minimum standards, to stress the importance of what is tested, to deliberately affect curriculum and teaching, and as a general guide to policy formulation.

There is no additional state assessment program, nor is there any requirement that districts have their own testing programs.

The respondent reviews domain specifications and items. She chairs the committee to develop competencies. The state mathematics teachers organization plays no formal role in state testing. Mathematics teachers serve on the competency development committee and review competencies but play no definite role in actual testing.

STATE-WIDE TEST

	GRADE LEVEL TESTED												
TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
CTBS				O		O			O				
NMAT		C	C	C	C	C	C	C	C				

O = Past (1984)
C = Current

NEW YORK
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that New York had no mandated tests. This was not and is not now the situation. New York has a mandated test for all state students--public, private, or parochial--at the end of Grades 3 and 6. These tests are new each year, and are developed in conjunction with teachers. In addition, the state department of education mandates that all 9th-graders take either the Regents Competency Test or the Regents Examination in Course I (this test may be taken in a later grade). These tests were developed by the state department of education (using questions submitted, tested, and formatted by state teachers); they are seen primarily as tests of the student's understanding of the mathematics curriculum.

A substantial number of questions involve each of several broadly defined topics, narrowly defined topics, or several topics. A substantial number involve mathematical symbols, brief verbal descriptions, or use graphs/pictures. The context is described as a familiar everyday experience for most students and as curriculum-based. The test seeks a single correct answer in open-ended and multiple-choice formats.

Availability of scores for individual students is determined locally; the state receives data on the percent passed and the percent failed. Summary reports for each class, the school, and the district are available depending on local determination. Summary reports on students taking the test state-wide are available on percent passed and percent failed only.

The state uses the test for the allocation of funds, for student assignment to special programs (e.g., remediation), as a high school graduation requirement and for district comparison. In general, the state uses the data to set a standard, to stress the importance of what is tested, and to deliberately affect curriculum and teaching.

There is no additional state assessment program, nor does the state require districts to have their own testing programs. However, in order to qualify for federal funds, many districts must provide some form of evaluation in at least Grades 7 and 8 and possibly in others. It may be based on any standardized or criterion-referenced test, which is typically developed by a commercial publisher and a district committee. These tests are described as primarily tests of both basic/essential skills and the student's understanding of the mathematics curriculum. The state uses district tests to determine eligibility for federal and state compensatory funding and for the allocation of funds within the district.

The consultant's role, as annual Presidential Appointee to the State Teachers Association General Assembly, is to serve on various association committees and to review the tests.

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
STATE-WIDE TEST													
YEAR 3 & 6				C			C						
COMP/REGENTS										*	*	*	*

* Students must pass a competency test or a Regents exam in math for graduation.

C= Current

NORTH CAROLINA
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that North Carolina gave the Diagnostic Mathematics Inventory (DMI) at Grades 1 and 2 and the California Achievement Test (CAT) at Grades 3, 6 and 9. This is no longer the situation. North Carolina has no mandated test for Grades 1 and 2, but uses the CAT in Grades 3, 6, and 8. There is also a competency test given in Grade 10.

The legislature mandated that all 3rd-, 6th-, and 8th-graders take the California Achievement Test. This test is described as a test of the student's understanding of the mathematics curriculum. A substantial number of questions involve several topics and are presented using brief or extensive verbal descriptions, and graphs/pictures. The context is described as a familiar everyday experience for most students. The test seeks a single correct answer in a multiple-choice format.

State scores for individual students, each class, the school, the district and for students taking the test state-wide are available on objectives/topics tested.

The state uses the test to evaluate state policies, to make student assignments to special programs, to compare schools within the district, school systems and geographic regions of the state, and to compare state students with the national norms. In general, the state uses the data to report to the public and the legislature, to set a standard, to stress the importance of what is tested, and to deliberately affect curriculum and teaching.

The legislature and state department of education also mandated that all 10th graders take the state Competency Test, developed by a commercial publisher. It is reported to be primarily a test of essential/basic skills. The test contains these topics: problem solving, communication, number, number systems, computation, measurement, estimation, geometry, statistics, and consumer related applications. A substantial number of questions involve broadly defined topics. A substantial number of questions are presented using mathematical symbols and graphs/pictures. The context is described as a familiar everyday experience of most students. The test seeks a single correct answer in a multiple-choice format.

Summary reports on objectives/topics tested for the school, the district and for students taking the test state-wide are available to teachers.

The state uses the results to compare regions within the state and districts, and as a graduation requirement. (Students must pass the test to receive a diploma. They have several opportunities to pass the test if they fail on the first attempt). In general, the state uses the test to inform the public by publishing the results, to set a standard, to stress the importance of what is tested, to deliberately affect curriculum and teaching, and as a general guide to policy formulation.

There is no additional state assessment program, nor is there any requirement that districts have an assessment program.

As a state math consultant, the respondent serves (as a consultant to) the State Testing Commission and has input into all decisions related to the curriculum and any impact testing might have on mathematics education in North Carolina. He has a close working relationship with the state Division of Research and Testing and assists (them) in all phases of test selection, test administration, development of test results reporting forms, test results interpretation, and staff development related to testing. Various members of the North Carolina Council of Teachers of Mathematics have served the State Testing Commission as advisors, test reviewers, and in other capacities. One of the officers of the North Carolina Council of Teachers of Mathematics is a member of the State Testing Commission. The officers of the organization have written position papers and letters regarding certain aspects of the testing program. The State Mathematics Division and the Division of Research and Testing makes a concerted effort to keep the organization informed on items related to testing and to involve and inform teachers on testing issues as much as possible. Several teachers have served the State Testing Commission as test reviewers, and as members of special advisory committees.

Note: North Carolina is in its third year of testing all students in Algebra I with an "end of course" test. The 89 objectives of this test are a subset of the 112 objectives in the state curriculum guide for Algebra I.

STATE-WIDE TEST

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
DMI		O	O										
CAT				B			B		C	O			
COMPETENCY											C		

O = Past (1984)
C = Current
B = Both Past & Current

NORTH DAKOTA
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that North Dakota administered the Mathematics Assessment (MA) at Grades 4, 6, 8 and 11. This is no longer the situation. North Dakota now has a standardized achievement test, either the Iowa Test of Basic Skills (ITBS) or the Science Research Association (SRA) Test, at Grades 3, 5, 7, 9 and 11; but testing is done only to satisfy accreditation requirements and hence compliance is voluntary.

The respondent is involved in standardized test procedures. The state mathematics teachers organization participates in the State Curriculum Council. Mathematics teachers may be assigned at the local school district level to administer tests and/or interpret results.

There is no state assessment program, and no requirement that districts have assessment programs.

STATE-WIDE TEST

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
MA					O		O		O			O	
ITBS/SRA *				C		C		C		C		C	

O = Past (1984)
C = Current

* Given to satisfy accreditation requirements only. Compliance is voluntary.

OHIO
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Ohio used a Needs Assessment at Grades 4, 8, and 12. This is no longer the situation. Now, Ohio gives three types of tests: (1) achievement and ability (A&A) tests for Grades 4, 6, and 8, selected by the district from a list of approved standardized tests; (2) high school proficiency (HSP) tests at grades 9 and 12, developed by the state; and (3) locally-developed competency tests given at one grade level in each range, Grades 1-4, 5-8, and 9-11 as determined by the local district.

The legislature mandated that all 4th-, 6th-, and 8th-graders take the achievement and ability tests, developed by a commercial publisher and selected by the district from an approved list. It is primarily a test of basic/essential skills. Since tests are chosen from an approved list, data on test characteristics are not compiled by the department. The tests all seek single correct answers in a multiple-choice format.

Scores for individual students, each class and the school are not available to teachers. Summary reports on the district and on students taking the test state-wide are available to teachers as an overall score only, but, since it is a new program, more detail could follow.

The state uses test results to evaluate state policies and to compile a state profile and data base. Other uses are not yet decided. In general, the state uses the data to report to the public and the legislature and as a general guide to policy formulation.

The legislature mandated that high school proficiency tests (HSPT) be given to the 9th- and 12th-graders in all districts. It was developed by the Educational Testing Service from state objectives produced by a statewide committee of teachers and math educators. It is described as primarily a test of basic/essential skills.

Since this is a new program, test characteristics are not yet finalized. The test will seek single correct answers in a multiple choice format.

A summary report for the school is not available to teachers. A summary report for the district is available to teachers as an overall score. A summary report on students taking the test state-wide is available to teachers on objectives/topics tested. Since this is a new program, more detailed summary reports may be produced in the future.

The state uses the information from its mathematics assessment program to develop new programs, to generate data bases for decision-making, and to create a state-wide profile from which local districts can make comparisons. In general, the state publishes the results of the state mathematics tests to inform the public and as a general guide to policy formulation.

There is no additional state assessment program. However, as indicated above, the legislature mandated the use of locally-developed competency tests given at a grade level as determined by local districts in each range, Grades 1-4, 5-8, and 9-11.

The respondent plays no role in state testing. The mathematics teachers organization provides representation on a guideline development committee. The state mathematics teachers provide representation on objectives development committees.

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
STATE-WIDE TEST													
NEEDS ASSMNT					O				O				O
A & A					C		C		C				
HSP										C			C
DISTRICT TEST													
COMP. TEST		ONCE				ONCE				ONCE			

O = Past (1984)
C = Current

OKLAHOMA
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Oklahoma had no mandated tests. This is no longer the situation. Currently the legislature mandates that all students in Grades 3, 7, and 10 take the Metropolitan Achievement Test (MAT), 6th Edition, developed by The Psychological Corporation. It is described as primarily a test of basic/essential skills. Provisions are made for exemptions of children on IEP and/or of limited English proficiency.

Many test questions involve a broadly defined topic, others a narrowly defined topic. A substantial number of questions are presented using mathematical symbols or brief verbal descriptions. The context is described as more likely to be familiar to adults, or as essentially abstract. The test seeks a single correct answer in a multiple-choice format.

State scores for individual students are available on objectives/topics tested and on the Oklahoma Suggested Learner Outcomes measured by the test. State scores for each class are not available. State scores for the school, the district, and for students taking the test state-wide are available on individual items, objectives/topics tested, and on the Oklahoma Suggested Learner Outcomes measured by the test.

The state uses the results of the state mathematics test to compare state students with national norms and as an indicator of areas of curriculum and instruction that need improvement. In general, the state uses the data to report to the public and the legislature.

There is no additional state assessment program, nor is there a requirement for districts to have their own assessment programs.

The respondent provides in-service to teachers on areas of need as indicated by test results. The state mathematics teachers organization plays no role in state testing. A committee of math teachers did a correlation of each proposed test and of Oklahoma Suggested Learner Outcomes in the process of selecting a standardized test to be used in the state assessment program. The committee's input was used to select the test for the state assessment. Classroom teachers use test results to improve instruction.

STATE-WIDE TEST

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
MAT				C				C			C		

C = Current

OREGON
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Oregon had the Assessment Test (AT) at Grades 4, 7, and 11. This is no longer the situation. Oregon now administers a state assessment test to a sample of students in Grades 3, 5, 8, and 11. This test, mandated by the State Board of Education, was developed by an advisory committee of the state department of education. It is described as primarily a test of basic/essential skills.

Topics included on the state assessment test are: problem solving, number, number systems, computation, measurement, estimation, geometry, probability, and statistics. A substantial number of questions involve a broadly defined topic or several topics. They are presented using mathematical symbols, brief verbal descriptions, and graphs/pictures. The context is described as a familiar everyday experience for most students. The test seeks a single correct answer in a multiple-choice format.

State scores for the school, the district, and students taking the test state-wide are available on objectives/topics tested.

The state uses the test in the evaluation of state policies and in planning curriculum and in-service. In general, the state uses the data to report to the public and the legislature, to deliberately affect curriculum and teaching, and as a general guide to policy formulation.

The State Board of Education also mandates that all 3rd-, 5th-, 8th-, and 11th-graders take a district test, chosen (by the district), or developed by a commercial publisher and a district committee. It is described as primarily a test of the student's understanding of the mathematics curriculum.

The state uses the district test results in evaluation of state policies and to compare state students with national norms. In general, the state uses the district tests to inform the public by publishing the results, to deliberately affect curriculum and teaching, and as a general guide to policy formation.

The respondent is a consultant to the assessment/evaluation section of the state department of education. The state mathematics teachers organization plays no role in state testing. A panel of state mathematics teachers advises the assessment/evaluation section.

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
STATE ASSESSMENT PROGRAM													
ASSESSMENT				C	O	C		O	C			B	
DISTRICT TEST													
SELECTED				C		C			C			C	

O = Past (1984)
C = Current
B = Both Past & Current

PENNSYLVANIA
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, Eric reported that Pennsylvania had the Educational Quality Assessment (EQA) tests at Grades 5, 8 and 11. In 1988, these tests were given in grades 4, 5, 6, 7, 9 and 11. The Pennsylvania Legislature mandated that, beginning in 1989, Test of Elementary Learning Skills (TELS) would be administered in Grades 3, 5 and 8. TELS was also field tested in reading and mathematics at Grades 2, 3, 4, 5, 6, 7, 8, 9, and 10, and will be implemented in those grades in 1990.

The TELS test was developed by a commercial publisher, the state department of education, and a content review committee (in 1989, publisher participation was terminated). TELS is primarily a test of basic skills.

A substantial number of questions involve broadly defined topics, while others involve narrowly defined topics. Questions are presented using mathematical symbols, brief descriptions or pictures/graphs. The context is essentially abstract. The questions are in a multiple-choice format and seek a single correct answer.

State scores for individual students are available on the objectives or topics tested. Summary reports on each objective are available for the school, district and state. Summary reports for the class are not available.

The state uses the test in the allocation of funds, in assigning students to special programs, and in comparing districts and schools within a district. In general, the state uses the test to report to the legislature and public, to stress the importance of what is tested, and to deliberately affect curriculum and teaching.

There is no additional state assessment program, nor is there a requirement for districts to have their own assessment programs.

The respondent reviews test objectives and items. The state math teacher organization has no formal role in state testing, but mathematics teachers help determine objectives and write items.

STATE-WIDE TEST

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
EQA					O	O	O	O		O		O	
TELS			C*	C	C*	C	C*	C*	C	C*	C*		

* To begin in 1990.

O = Past (1984)
C = Current

RHODE ISLAND
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC incorrectly reported that Rhode Island had no mandated tests. Rhode Island state testing was mandated in 1984. Currently, the Rhode Island legislature mandated that all students in Grades 3, 6, 8, and 10 (with minor exceptions) take the Metropolitan Achievement Test (MAT), 6th Edition, developed by a commercial publisher. It is described as a test of basic/essential skills.

A substantial number of questions involve several topics. They are presented using mathematical symbols or brief verbal descriptions. The context is described as more likely to be familiar to adults. The test seeks a single correct answer in a multiple-choice format.

State scores for individual students, each class, the school and the district are available on objectives/topics tested. A summary report for the students taking the test state-wide, as well as an overall math score, are available to teachers on concepts, computations, and problem solving.

The state uses the test in the evaluation of state policies, in making student assignments to special programs, and in the comparison of state students with national norms. In general, the state uses the data to report to the public and the legislature, to stress the importance of what is tested, and as a general guide to policy formation.

There is no additional state assessment program, nor is there a requirement for districts to have their own assessment programs.

The respondent is a supervisor for state assessment. The state mathematics teachers organization and teachers have no formal roles with respect to mathematics testing.

STATE-WIDE TEST

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
MAT				C			C		C		C		

C = Current

SOUTH CAROLINA
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC incorrectly reported that South Carolina had no mandated tests. The South Carolina Basic Skills Assessment Program (BSAP) was mandated through legislation in 1978. Currently, all students in Grades 1, 2, 3, 6, and 8 take the Basic Skills Assessment Program Tests, which were developed by the state department of education. These tests are criterion referenced and are described as primarily tests of basic/essential skills.

Many questions on the tests involve a narrowly defined topic. A substantial number involve brief verbal descriptions and graphs/pictures. The context is described as a familiar everyday experience for most students. The tests seek a single correct answer in a multiple-choice format.

Scores for individual students and each class are available on objectives/topics tested. Summary reports for the school and the district are available on individual items and on objectives/topics tested. A summary report on students taking the test state-wide are available on individual items.

The state uses the test data in the evaluation of state policies, teacher salary, school incentive grants, in the allocation of remedial/compensatory funds, in grade to grade promotion/retention, in student assignment to special programs and as a high school graduation requirement. In general, the state uses the data to report to the public and the legislature, to stress the importance of what is tested, to deliberately affect curriculum and teaching, and as a general guide to policy formulation.

There is no additional state assessment program, nor is there a requirement for districts to have their own assessment programs.

The consultant's role is to administer tests and to provide training. The state mathematics teachers organization as well as individual mathematics teachers have indirect input through mathematics advisory committees.

STATE-WIDE TEST

	GRADE LEVEL TESTED												
TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
BSAP		C	C	C			C		C			*	*

* Exit levels

C = Current

SOUTH DAKOTA
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that South Dakota had no mandated tests. This is no longer the situation. In 1985, the South Dakota State Board of Education initiated rule number 24:03:06:17, which states that: "Schools shall administer an achievement testing program for all pupils in Grades 4, 8, and 11 during the spring of each year, using a recognized achievement test provided by the Division of Elementary and Secondary Education. . . .This test battery to be administered shall include tests in the subject areas of Language Arts, Reading, Mathematics, Science and Social Studies." The South Dakota Board of Education selected the Stanford Achievement Test (SAT) and the Otis-Lennon School Ability Test (OLSAT). They are described as primarily tests of basic/essential skills.

The tests include the following topics: problem solving, number, number systems, computation, estimation, geometry, and algebra. A substantial number of questions involve a broadly defined topic. They are presented using mathematical symbols. The context is described as a familiar everyday experience of most students. The tests seek a single correct answer in a multiple-choice format.

State scores for the school, the district, and for students taking the test state-wide are available on individual items. School districts are sent the results directly.

The state does not use the test for any of the reasons described on the questionnaire.

There is no additional state assessment program, nor is there a requirement for districts to have their own assessment programs.

The respondent, the state mathematics teachers organization, and state math teachers play no role in state testing.

STATE-WIDE TEST

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
SAT/OLSAT					C				C			C	

C = Current

TENNESSEE
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Tennessee had no mandated tests. This is no longer the situation. Tennessee currently has a competency-based curriculum in Grades K-12. Suggested tests are provided to accompany the curriculum in Grades K-8 (some are oral tests, some observational, and some written). Tennessee also has three separate testing programs, as outlined below. At the time of the survey, the testing program in Tennessee was under another revision, with all present testing programs scheduled to end in Spring, 1989. An entirely new testing program will be in effect in 1990. The answers on this survey are based on the present program.

The state department of education developed the Basic First Achievement Tests (BFAT) to be given to all students in Grades 3, 6, and 8. This test is described as primarily a test of the student's understanding of the mathematics curriculum.

Many questions on the test involve several topics. A substantial number of questions involve mathematical symbols, brief verbal descriptions, extensive verbal descriptions, or graphs/pictures. The context for some questions is described as a familiar everyday experience for most students, while other are described as essentially abstract. The tests seek a single correct answer in a multiple-choice format.

Scores for individual students, each class, the school, the district, and for students taking the test statewide are available to teachers on objectives/topics tested.

The state uses the test to evaluate curriculum implementation. In general, the state uses the data to report to the public and the legislature.

The state board of education also mandated that all students in Grades 2, 5, 7, 9, and 12 in all districts take the Stanford Achievement Test (SAT), described as primarily a test of basic/essential skills.

Many questions on the test are broadly defined and involve mathematical symbols, brief verbal descriptions, extensive verbal descriptions, and graphs/pictures. The context is described as a familiar everyday experience for most students. The tests seek a single correct answer in a multiple-choice format.

Scores for individual students and summary reports for each class and for students taking the test state-wide are available to teachers on objectives tested (subtests) and in terms of general objectives. Summary reports for the school and district are available to teachers on objectives/topics tested (subtests), on general objectives, and as a percentage of correct responses.

Test results are used in student assignment to special programs. In general, state mathematics tests are used to inform the public and the legislature.

In addition to the above two programs, the legislature mandated that all 9th-grade students take the Tennessee Proficiency Test (TPT), developed by the state department of education. It is described as primarily a test of basic/essential skills.

A substantial number of questions involve several topics, and are presented using mathematical symbols, brief verbal descriptions, and graphs/pictures. The context is described as a familiar everyday experience for most students. The test seeks a single correct answer in multiple choice format.

Scores for individual students, and summary reports for each class, the school, the district, and for students taking the test state-wide are available to teachers by objectives or topics tested.

The state uses the test as a high school graduation requirement, and to report to the public and the legislature.

There is no additional state assessment program, nor is there a requirement for districts to have their own assessment programs.

The respondent participates/ed in the development of the test and recommends procedures and policy. Teachers are involved throughout the testing process. They provide recommendations on policies, procedures, and development.

STATE-WIDE TEST

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
BFAT				C			C		C				
SAT			C			C		C		C			C
TPT										C			

C = Current

TEXAS
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC incorrectly reported that Texas gave the Assessment of Basic Skills Tests (ABST) at Grades 3, 5, 9, 10, 11 and 12. In fact, 10th-, 11th- and 12th-graders only took this test if they had not passed it previously. Even this is no longer the situation, however. The legislature mandated that all students in Grades 1, 3, 5, 7, 9 and at exit levels (i.e., Grades 11 or 12) take the Texas Educational Assessment of Minimum Skills (TEAMS), developed by the state department of education in conjunction with a committee of teachers and a commercial publisher as contractor. TEAMS is described as a test of basic/essential skills but plans for its 1991 revision are expected to make it more a test of the student's understanding of the mathematics curriculum.

The test includes the following topics: problem solving (minimal), number, number systems, computation, measurement, geometry, algebra, probability, and statistics. A substantial number of questions involve topics that are classified as neither broadly nor narrowly defined. They are presented using mathematical symbols, brief or extensive verbal descriptions, and graphs/pictures. The context is described as a familiar everyday experience for most students. The test in general seeks a single correct answer in a multiple-choice format, but some questions are open-ended.

State scores for individual students, each class, the school, the district and for students taking the test state-wide are available on objectives/topics tested.

The state uses the test to: evaluate state policies; compare districts, schools within the district and state students with the national norms; determine acceleration status; for program evaluation, student graduation, and in the certification of mathematics competency; and to identify schools that need technical assistance. The test is also used as one criterion in decisions regarding the consolidation/closure of schools, declaration of "bankrupt" districts, grade-to-grade promotion/retention, and student assignment to special programs (although these vary by situation and by district). In general, the state uses the data to report to the public and the legislature, to set a standard, to stress the importance of what is tested, and to deliberately affect curriculum and teaching.

There is no additional state assessment program, nor is there a requirement for districts to have their own assessment programs.

The respondent serves as an advisor with assessment staff committed to supporting the state curriculum. Leaders of the state mathematics teachers organization often serve on the advisory committee although they play no official role in state mathematics testing. State mathematics teachers serve on advisory committees at all levels in all phases of the development of mathematics tests.

STATE-WIDE TEST

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
ABST				O		O				O	O*	O*	O*
TEAMS		C		C		C		C		C		C#	C#

* Given only to students not passing previously
\# Given at exit level

O = Past (1984) C = Current

UTAH
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Utah had no mandated tests. This no longer the situation. End-of-level tests are now complete and they will be administered to all students in Grades 1-6 and to secondary school students upon completion of a specific course. These tests are written to correspond to the mathematics core curriculum as designed and accepted in Utah. It is highly recommended that all districts participate. Thirty out of 40 districts are currently involved.

In addition, the legislature mandated that all 9th-graders take the Stanford Achievement Test (SAT), the Iowa Test of Basic Skills (ITBS), or the California Test of Basic Skills (CTBS). These are described as primarily tests of the student's understanding of the mathematics curriculum.

A substantial number of questions are presented using mathematical symbols, brief verbal descriptions, and graphs/pictures. The context is described as a familiar everyday experience for most students. The tests seek single correct answers in a multiple-choice format.

State scores for individual students, each class, the school, the district, and for students taking the test state-wide are available on objectives/topics tested.

The state uses the test as a high school graduation requirement and to compare state students with national norms. In general, the state uses the data to set a standard.

In addition to this statewide testing, the legislature mandated that 5th- and 11th-graders in all districts take the state assessment program (SAP) test, which was developed by a commercial publisher. A random sample of this set is then drawn for analysis. It is described as primarily a test of the student's understanding of the mathematics curriculum.

The tests include the following topics: communication, reasoning, number, number systems, computation, measurement, estimation, geometry, algebra, and probability. A substantial number of questions involve a narrowly defined topic. They are presented using brief or extensive verbal descriptions and graphs/pictures. The context is described as a familiar everyday experience for most students. The test seeks single correct answers in a multiple-choice format.

State scores for the school, the district, and for students taking the test state-wide are available on objectives/topics tested.

The state uses the test as an evaluation of state policies and to compare state students with national norms. In general, the state uses the data to inform the public by publishing results, to set a standard, and as a general guide to policy formulation.

The state does not require districts to have their own assessment programs.

The respondent is involved in the dissemination of materials and in in-service training with respect to the content and the use of tests. The state mathematics teachers organization plays no part in state testing. State mathematics teachers administer the tests and help in evaluation.

	GRADE LEVEL TESTED												
TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
STATE-WIDE TEST													
SAT/ITBS/CTBS										C			
STATE ASSESSMENT PROGRAM													
SAP						C						C	

C = Current

VERMONT
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Vermont had no mandated tests. This is still the situation. However, the legislature recently gave permission to develop a state-wide testing program with two components: a standardized test and a portfolio on each student. It is being developed with extensive input from teachers. Current plans are to give the test in Grades 4 and 11, with information available on individual items at the school, district, and state levels. The test is drawing heavily on the NCTM *Standards* in an effort to reflect "what is current and what should be taught."

VIRGINIA
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Virginia administered the Science Research Associates (SRA) Test at Grades 4, 8 and 11. This is no longer the situation. The legislature mandated that all 4th-, 8th-, and 11th-graders take the Iowa Tests of Basic Skills (ITBS). It is described as primarily a test of basic/essential skills.

The state test includes the following topics: problem solving, number, number systems, computation, measurement, estimation, geometry, algebra, probability, statistics, and functions. A substantial number of questions involve a broadly defined topic. A substantial number of questions are presented using mathematical symbols, brief verbal descriptions, and graphs/pictures. The context for some questions is described as a familiar everyday experience for most students, while others are more likely to be familiar to adults. Some are essentially abstract. The test seeks a single correct answer in a multiple-choice format.

State scores for individual students are available to teachers on objectives/topics tested. Summary reports for each class are not readily available. Summary reports for the school and district are available to teachers on objectives/topics tested and as an overall score. A summary report on students taking the test state-wide is available to teachers.

The state uses the test to check student achievement, to determine the need for remediation in mathematics, and to compare state students with national norms. In general, the state uses the data to report to the public and the legislature.

There is no additional state assessment program, nor is there a requirement for districts to have their own assessment programs.

The respondent helped select the state test. No input was asked of the mathematics community regarding mathematics testing. In some cases math teachers assist in the administration of the test.

STATE-WIDE TEST

	GRADE LEVEL TESTED												
TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
SRA					O				O			O	
ITBS					C				C			C	

O = Past (1984)
C = Current

WASHINGTON
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Washington mandated the California Achievement Test (CAT) at Grades 4, 8, and 11. This is no longer the situation. The legislature mandated that all 4th-, 8th-, and 10th-graders take the Metropolitan Achievement Test (MAT). It is described as primarily a test of basic/essential skills, which seeks a single correct answer in a multiple-choice format.

State scores for individual students, each class, the school, the district, and for students taking the test state-wide are available on individual items, objectives/topics tested, and as an overall score only.

The state uses the test to determine student basic skills achievement, in the allocation of funds for special programs, and to compare districts and state students with national norms. In general, the state uses the data to report to the public and the legislature, to stress the importance of what is tested, and as a guide to policy formulation.

There is no additional state assessment program, nor is there a requirement for districts to have their own assessment programs.

The respondent and the state mathematics teachers organization play only an informational role with respect to mathematics testing. The mathematics teachers actually give the test.

STATE-WIDE TEST

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
CAT					O				O			O	
MAT					C				C		C		

O = Past (1984)
C = Present

WEST VIRGINIA
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that West Virginia administered the Comprehensive Tests of Basic Skills (CTBS) at Grades 3, 6, 9, and 11. This is still the situation. The CTBS is described as primarily a test of basic/essential skills, and its administration was mandated by the state department of education.

A substantial number of questions on the test involve several topics. A substantial number are presented using mathematical symbols. The context is described as a familiar everyday experience for most students. The tests seek a single correct answer in a multiple-choice format.

Scores for individual students are available on individual items. Summary reports for each class, school, and district are available on objectives/topics. Summary reports on students taking the test state-wide are available as an overall score only.

The state uses the test to compare districts and state students with national norms. In general, the state uses the data to report to the public and the legislature and as a general guide to policy formulation.

There is no additional state assessment program, nor is there a requirement for districts to have their own assessment programs.

The consultant's role is to analyze test results. The state mathematics teachers organization plays no role with respect to mathematics testing. Mathematics teachers help administer the state mathematics test.

STATE-WIDE TEST

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
CTBS				B			B			B		B	

B = Both Past & Present

WISCONSIN
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Wisconsin administered the Pupil Assessment Program (PAP) at Grades 4, 8 and 12. This is no longer the situation. Now, Wisconsin administers the Comprehensive Test of Basic Skills (CTBS) at Grade 11 on a stratified random sampling basis. Because of random sampling of districts and students, no district is identified. An annual assessment report is prepared and distributed to the Governor, the Legislature, all school districts, and the news media.

In addition, the legislature mandated that "Each school board shall: [use] achievement tests that are aligned with the school district's curriculum, test all of the pupils enrolled in the school district in reading, language arts and mathematics at least twice in grades kindergarten to 5, at least once in grades 6 to 8, and at least once in grades 9 to 11."

The test and, therefore, the test's developer vary from district to district. This test is primarily either a test of basic/essential skills or the students understanding of the mathematics curriculum, depending on the district curriculum.

The state uses district tests in the evaluation of state policies and in the allocation of funds (but only if tests are not administered). In general, the state uses the district tests to set a standard, to deliberately affect curriculum and teaching, and as a general guide to policy formulation.

The respondent plays a minimal role with respect to state testing. This class of testing is mandated by law and is done in as unobtrusive and non-disruptive manner as possible. All other testing is under the jurisdiction of local educational authorities and so the teachers organization has no official, nor unofficial, policy on testing. The role of mathematics teachers in state testing is hard to assess; if any, it exists at the local district level, and so, can vary greatly.

GRADE LEVEL TESTED

TEST NAME	K	1	2	3	4	5	6	7	8	9	10	11	12
STATE-WIDE TEST													
PAP					O				O				O
STATE ASSESSMENT PROGRAM													
CTBS												C	
DISTRICT TEST													
SELECTED	TWICE K-5						ONCE 6-8			ONCE 9-12			

O = Past (1984)
C = Current

WYOMING
SUMMARY OF RESPONSE TO STATE QUESTIONNAIRE

In 1984, ERIC reported that Wyoming had the Education Needs Assessment Project Test at Grade 12. This is only the case for college-bound students. As part of the accreditation of Wyoming schools, each district must have a minimum competency plan in mathematics.

The respondent checks to see that districts have a testing program. Neither the state mathematics teachers organization nor state mathematics teachers play any part in state testing.

III

DISCUSSION AND SUMMARY

The general purpose of the current study was to document mathematics testing practices in the fifty states. Regularities in the data indicated a prototypical model for mathematics testing and ways in which state practices diverged from that model. In this section, both typical and atypical testing practices evident in the data are discussed.

Information was obtained from the 50 states about 62 different mathematics tests or testing programs mandated at the state level. Some of these were being phased out during the year of the survey, while others were just beginning. In some cases, information was not available on new programs, or on tests mandated by the state but chosen by the district. In all, seven of the 62 tests were not described in any detail. The figures presented in this document reflect the information as reported, and thus describe the 55 tests for which information is available. However, because not all information was reported in all states, the figures will not necessarily total 55.

The Prototypical Testing Model

A major purpose of the current study was to document typical testing practices among the fifty states, exposing the regularities apparent in those practices and attempting to identify an archetypical testing program, if possible. One approximation to this archetype can be obtained by examining attributes reported for 50% or more of the state testing programs. While this is only a crude measure of what is typically done, it does provide some insight into current practice. In this sense, then, the typical state testing program:

* employs one test given to all students at each of three or four grade levels;
* seeks a single correct answer in a multiple choice format;
* is developed by or in conjunction with a commercial publisher;
* is seen as a test of basic skills;
* is used by the state in reporting results to the public and/or to the legislature, and in comparing students with national norms; and
* provides to teachers information both on individual students and on the school, district, or state as a whole at the level of the objectives or topics tested.

Thus the dominant model for state mathematics testing emerges as one involving a single series of state-wide, commercially produced, multiple choice tests of basic skills given to all students at three to four grade levels. While there are obviously deviations from this norm, it is characteristic of a large number of state programs.

Deviations from the Prototypical Model

One obvious deviation from the Prototypical Model is manifest in the six states which reported having no mandated testing program. To be sure, this does not *necessarily* imply that testing does not occur in these states; they may even test on a large scale. In Iowa, for example, the state requires each local educational authority to have an assessment program, but does not mandate any *testing* at the state level. However, virtually all schools utilize the Iowa Test of Basic Skills. Wyoming also requires each district to have a testing program, but does not collect the data. In other states, such as North Dakota, testing is used only for individual accreditation

of the schools and is therefore completely voluntary. Vermont and Nebraska have no mandated testing whatsoever, although such a program is in the planning stage in both states. Finally, Montana reported no mandated testing either currently in place or at the planning stage.

Given that states in general do mandate some testing, one way in which they vary from the archetypical model is in terms of the number of grade levels tested. Figure 1 demonstrates that although the majority of states test three or four grade levels per year, the number of grades tested varies widely among states, ranging from 0 (in those states with no testing programs) to 11 grade levels each year. Note that 15 states test five or more grade levels per year.

A second variation occurs in the number and type of tests mandated. Thirty states were found to follow the archetypical model in that they gave only one state-wide mathematics test required of every student in a grade level (three of these require in addition some kind of testing

Figure 1. Histogram Showing Number of Grade Levels Tested in State-Mandated Testing Programs

X = state

at the district level). It is interesting to note that of these, 12 used tests developed by a commercial publisher, and 18 used tests developed by the state department of education (often in collaboration with teacher committees, university consultants, commercial publishers, and others.). This data does depart from the archetypical model. However, a closer look at states in which more than one test is given reveals that most of *those* states use tests that are commercially developed. In total, of the 55 *tests* reported (i.e. including those which are given in states mandating more than one test), twenty-six (47%) were developed by a commercial publisher, 5 (9%) were developed by the state in conjunction with a commercial publisher, 18 (33%) were developed by the state department of education (often in conjunction with committees of teachers), and 3 (5%) were developed by the state and an outside contractor (3 more were district tests chosen by the district; thus the developer of the test could vary by district).

Returning to the 30 states mandating only one test, the data indicates that 24 of these 30 states viewed their test as measuring basic or essential skills, again in keeping with the archetypical model. On the whole, 37 (67%) of the 55 tests were reported as being tests of basic/essential skills. Fourteen (25%) were reported as being tests of students' understanding of the mathematics curriculum and 4 (7%) were reported as being both.

Of the remaining 14 states which mandate more than one test or testing program, one state required only that districts give a test at grades within specified ranges; four states had an assessment program either affecting only a sample of students or using matrix sampling of questions (three of these also required testing on the district level); and the remaining nine states had at least two, and in five cases, three different tests administered state-wide, at different grade levels. It should be noted that in almost every case, states having two or more tests or testing series as part of their testing program did not employ more than one at a grade level; the exceptions occurred for high school competency examinations or in cases where districts were free to choose a grade level at which to give a test. In only one state did a state assessment program, which tested a sample of students, overlap with state-mandated, district-chosen tests in all four grade levels at which each test was given.

A third way in which states were seen to vary from the archetypical model was in the uses to which the tests were put. It is largely due to the diversity of uses that few prototypical uses emerged. Of the 55 tests for which we received detailed information, 19 (35%) were used for allocation of funds (often for special or remedial programs), 13 (24%) as a high school graduation requirement, 28 (51%) to compare state students with national norms, 22 (40%) to compare districts, 16 (29%) to set a standard, 49 (89%) to report to the public and/or the legislature, 20 (36%) to stress the importance of what was being tested, 24 (44%) to deliberately affect the curriculum, and 21 (38%) as a general guide to policy formation.

In addition to the counts given in the preceding paragraph, attention was paid to the number of policy uses which states reported making of their test results. Specifically, it was noted whether states used the results of the testing program in: evaluating teachers; evaluating administrators; allocating funds; setting promotion or graduation requirements; comparing different programs; comparing students with national norms; comparing districts; reporting to the public; setting standards; stressing the importance of what was being tested; affecting teaching or the curriculum; or formulating general policy. Figure 2 shows the number of uses reported for

Figure 2. Number of Policy Uses Reported for Each of the 55 State Mathematics Tests

X = state

the 55 tests. As is evident, the mode number of uses is 4; typically, these four uses involve comparing students, reporting to the public, setting standards, or comparing districts.

A final way in which deviations from the archetypical model could conceivably occur is in the format of the test; however, with only four exceptions, every test about which format data was reported was described as seeking a single correct answer in multiple choice format. The exceptions were some open ended questions on tests in California, Maine, New York, and Texas.

Changes in Use of Tests

A second, and in many ways more compelling, picture obtained from the data is one of change, specifically, change toward increased use of testing. Since 1984, twelve states reported by ERIC as having no mandated testing have instituted mandated testing of some kind. Another six made significant changes to their testing programs, increasing the number of grade levels tested by two or more. An additional seven added one grade level to their testing programs. Seven states reported no changes in the number of grade levels tested, but made some change in the tests used. Of the states reported in 1984 to have testing programs in place, only Montana and North Dakota currently have no mandated testing program. And only two states with current testing programs, Wisconsin and North Carolina, actually have less testing (i.e., testing at fewer grade levels) than in 1984. Four states without testing programs in 1984 still have no testing program, and five more have made no changes since 1984. In five cases, inaccuracies in the data reported by ERIC make the extent of change since 1984 unclear.

In summary, 36 states reported changes of some kind in their testing programs since 1984. Nine reported no changes, and in 10 cases, the amount of change is difficult to determine.

Qualitative Issues

Several themes of a non-quantitative nature emerged in summarizing the data from the survey. Based on the results of Survey I, it would be expected that the *stakes* of the test--that is, the consequences attached to test scores for students, teachers, and supervisors--would have a large effect on teachers' instructional behaviors. The most direct consequence is on teachers salaries and career ladders. The question becomes, then, how widespread is the use of state mathematics testing programs to insure teacher/supervisor accountability? In fact, only one state reported that test results were used as a partial determinant of teachers salaries, and only one reported the use of test results in evaluation of supervisors. However, two more states reported that state testing models were under consideration as a factor that would link teachers salaries and career ladders to test results. Clearly, testing is seen to be one method of insuring teachers accountability in these states. Even in those states where no overt link between test results and career ladder is made, the importance of the accountability issue is implied by the tendency to report test results to the public, to compare state students with national norms, and to compare districts. At least one state provides teachers and others who use test results with guidelines for making such comparisons, including the size of differences in score which could safely be considered as (educationally) significant. The accountability and comparisons of relative success are often important issues associated with state-mandated testing programs. On the other hand, the respondent from Arizona stated, "The legislature chose mandated testing as a way of insuring teacher accountability -- the State Department is developing ways to determine competency with other means." It is thus recognized, at least in one state, that both insuring teachers accountability and evaluating students learning *may* not be efficiently done with one test or testing program.

A second impact of state mathematics test results, one that is more often reported in the survey, is on students' graduation, promotion, or placement into remedial programs. In Indiana,

for example, students who fall below national percentile *and* state score levels are required to attend summer school remediation. Recall also that 24% of the tests are used in determining high school graduation eligibility. Often such tests are considered tests of basic skills given in ninth grade, and students are allowed to retake the test yearly until a passing grade is obtained. By increasing the stakes for students in these ways, states are able to send a clear message to students and teachers alike regarding the importance of what is being tested.

Closely tied with student remediation is the states' allocation of funds, both funds for special, remedial, or compensatory programs and performance based awards. In Florida, for example, the respondent explains,

> The Florida legislature has enacted statutes which require that public school students in Grades 3, 5, 8, and 11 attain certain prescribed standards (competencies) in reading, writing, and mathematics. Student achievement of these 'minimum student performance standards' is measured by statewide assessment tests. . . .If a student does not master a standard, remediation must be provided by the local school district, which then certifies when the students' skills have become sufficiently developed. To assist in remediation, compensatory education funds are provided by the Legislature, yearly, in relationship to performance on the State Student Assessment Tests.

Consideration of test results for allocation of funds is reported to occur based on test results for 35% of the tests. Clearly, test results have financial effects upon the districts and schools involved; the mechanism of a state-mandated test is again able to send messages to the individual districts, though in the case of compensatory funding, that message may not be so straightforward.

Aside from the possibility of using the *stakes* of the test to affect the behavior of teachers, students, and administrators below the state level, it is evident that some states use mandated testing to deliberately affect the curriculum. Indeed, it was reported that 36% of the tests were used to stress the importance of what was tested, and 44% of the tests were used to deliberately affect the curriculum or teaching. Two states reported that teachers were asked to cover the objectives on the test in class. At the same time, other states expressed concern over "teaching to the test," particularly when the test measured only minimal standards. In Florida's guide to assessment results, the point is made:

> Educators should be alert to the danger of gearing the curriculum to these minimum standards and should continue to provide challenging learning experiences in a variety of content areas such as social studies, health, music, and art. Furthermore, for many students, teachers should expect performance far beyond minimum standards. Schools must provide instruction which encourages all students to learn as much as they can. (Florida State Department of Education, 1987, p. 18)

Idaho's respondent stated, "It is not Idaho's desire to teach the tests but to teach so that learning takes place in such a way that children expand their conceptual understanding." California expressly prohibits "any program of specific preparation of the students within the district for the testing program as such or the particular test used therein." (California State Department of Education, 1986, p. i.) Thus it is clear that while testing is seen in some states as a method of affecting curricula and teaching statewide, in other states testing is viewed in the larger context of state objectives and the overall goals of the state school system.

Part of the difficulty in assessing the effect of testing on instructional and curricular decisions is the extremely close alignment of tests with state objectives. Many states, particularly those that participated directly in the development of tests for their mathematics tests for their testing programs, described the elaborate process of designing test items to meet specific goals of the state curriculum guidelines. This task was often assumed by a committee of teachers, and sometimes the process involved an outside contractor. Minnesota, for example, is currently

developing a new statewide testing program. The process began with the development of "Learner Outcomes" in mathematics, and later, test items were developed and correlated with the learner outcomes. The history of testing in many states is similar. Thus, the issue of whether testing has an effect on what is taught is immediately confounded with the issue of the effects of the state curricular guidelines. This may be true also in states which adopted a particular commercially developed standardized test, if that test was chosen with care to reflect the state's objectives.

Twenty-two states reported that teachers played a significant role in the testing program. Typically, teachers serve on committees which advise developers; they submit test items, pilot-test them, develop competencies, or align test materials to state curriculum guidelines. In Illinois, it was reported that

> Mathematics teachers are involved in every phase of assessment. They are involved in writing items, piloting items in their classrooms, selecting the best items from the pool of acceptable items, and suggesting formats for the final version of the instruments. Teachers will also help in the interpretation of the data.

In Maine, all tests are "developed by and interpreted by an advisory committee of mathematics teachers from all levels."

It is interesting to note that of the 18 tests that test students' understanding of the mathematics curriculum, 10 were developed in states in which teachers had an active role in testing; additionally, three of the four states employing some open-ended questions on their tests reported heavy involvement of teachers at all stages of test development. Whether these facts reflect teachers' influence or the desire on the part of the state to develop tests more tuned to teachers' concerns is open to question, but it seems reasonable that the involvement of teachers in the process of developing or selecting mathematics tests would tend to produce better tests to assess the kind of learning teachers are concerned about. In Vermont, for example, a state testing program is currently being developed by teachers that will have two components. One component will be a standardized test of the kind widely used in other states. The other component will involve the development of a portfolio on each student, documenting the mathematics capability of the student in various evaluative situations.

A final note concerns the implementation of the NCTM *Standards*. Several states (Vermont, Kentucky, Minnesota) noted explicitly the importance of using the NCTM *Standards* document as an aid to test development. While most testing programs currently in place predate the *Standards*, state mathematics supervisors are becoming increasingly aware of what the *Standards* imply about testing practices and the need to bring such practices into alignment with current thought.

Summary and Conclusions

Although most of the research questions from Section I have been addressed in the preceding paragraphs, it will be useful to summarize the answers to these questions and to discuss some factors affecting policymaking.

Question 1: Is mathematics testing mandated at the state level?

Mathematics testing is indeed mandated at the state level in all but six states. Mandated testing is under development in two of those states, and in two others testing programs are voluntary for accreditation. Of the remaining two states, one reports that a large amount of testing occurs at the district level. A wide range of variation exists in the number and types of tests used in the other 44 states, as well as the number of grade levels tested. It is safe to conclude, based on the data, that the vast majority of public school teachers in the United States are in situations where mandated tests are given.

Question 2: What is the process used in selecting or developing the test(s), and what are the methods of administration and reporting of results?

The process used in selecting and developing the tests again varies among states, but most states employ one of two basic models. Twenty-six of the 55 tests reported were developed by the state department of education, often in conjunction with teachers, outside contractors, or commercial publishers. In these states, tests are most often developed based on state curriculum, so that tests are by nature designed to be aligned with that curriculum. Test items are written to test items specific to state competencies, then pilot tested within the state. Over two-thirds of the 24 tests for which teachers had significant input were developed in-state in roughly this manner.

The second model used in test selection or development is the selection of an already developed and normed commercial test such as the Iowa Test of Basic Skills or the California Achievement Test. These tests are chosen based on alignment with state competencies and in some cases slightly modified by the states, as in the case of Indiana's ISTEP testing, which is the California Achievement Test with additional materials to cover state competencies. Twenty-six of the tests reported in the survey were chosen in this way. Less than a third of the tests for which teachers had significant input were chosen in this way.

Question 3: What are the role of the State Mathematics Consultant, the State Mathematics Teachers' Organization, and state mathematics teachers in the above process?

The role of the state mathematics consultant varied among states from almost no role whatsoever in testing, to direct involvement with planning and development of the test, interpretation of test scores, training of teachers in use of testing, and formation of testing policy. In some states, the consultant served the role of mediator between teachers, testing services, and the public. No single dominant role emerged from the data.

The role of teachers and the state teachers organization varied as well, although where there was teacher involvement there also tended to be involvement of the professional organization. In most states mechanism for teacher involvement was the formation of committees which informed test development or testing policy. In some cases, the professional organization provided the access to these committees, while in a few cases it played no formal role whatsoever.

Question 4: What are the names and characteristics of the tests used?

The names and characteristics of the tests used are provided in Section II. In general, the tests had a multiple-choice, single correct answer format, and were viewed as tests of basic skills. Almost all were designed so that every student in a grade level answered the same questions; very little sampling of students, or matrix sampling of questions, was reported.

Question 5: How are test results used by the state?

The uses to which the test results are put are reported at the beginning of this section. In general, tests are used as accountability devices, so that reporting test results to the public, comparing students with national norms, and comparing districts within the state are major uses of test results. Deliberately affecting curriculum, stressing the importance of what is tested, and setting a standard were each reported uses for between 29% and 43% of the tests, while about 34% of the tests were used for allocation of funds.

Question 6: How are test results reported to teachers?

Teachers for the most part receive test results for individual students at the level of objective or topic tested, rather than on individual items. This reflects the presence of the state competency or skill which is logically prior to the development of choice of the test. Nineteen tests provide teachers with item information on individual students, while nineteen more provided *only* objective level information on students. In total, 40 of the 55 tests provide student information at the item or objective level.

At the level of the school, district, or state, information is again provided to teachers largely at the level of objectives tested. Forty-six of the 55 tests provide information to teachers on school, district, or state at the level of individual item or objective tested.

Finally, one observation involving policy formation seems appropriate. The results of Survey I indicated that state testing on the average had less effect upon instruction than did district testing. Since the current study dealt only with *state* mandated testing programs, the results reported here may not reflect the type of testing situation which is most likely to have an effect on teachers, on students, or on administrators. This fact can be heartening or disheartening, depending upon whether particular state tests are seen as exemplary or not. In light of the considerable resources available in state departments of education for test production relative to that available at a district level, it is reasonable to assume that states can more readily than districts can develop new and innovative testing programs which will evaluate *mathematical power* as described in the *Standards*. Trends in this direction are already observable in California's Assessment Program and the new program under development in Vermont. Nevertheless, the power of district mandated testing should not be overlooked. Teachers seem to feel and respond to the effects of district-, as opposed to state-mandated testing more readily. So long as this is the case, such district programs will stand in the way of reform.

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